ISSUE 01

# AGRIVIEW

APRIL 2013 VOLUME 9

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Government of Saskatchewan
Ministry of Agriculture

# Minister's Message

Finance Minister Ken Krawetz recently introduced the 2013-14 provincial budget, Balanced Growth, which is characterized by fiscal responsibility and a strong, growing economy that allows investment into the quality of life for all Saskatchewan people. The budget includes a continued focus on farmers and ranchers. The 2013-14 Agriculture Budget is $406.9 million, the fourth largest Agriculture budget ever announced.

Crop Insurance coverage levels have increased to a record $194 per acre, on average, in 2013, more than double the coverage offered in 2007. The 2013 provincial Crop Insurance budget is a record-high $198 million. This is the largest in the history of the program, and a 91 per cent increase since 2007.

Our government continues to fully fund business risk management programs (Crop Insurance, AgriStability and AgriInvest) upfront so that farmers and ranchers can head into the growing season knowing their government continues to support them. While funding for AgriStability and AgriInvest has decreased, some of those savings have been reinvested into strategic areas that will help the agriculture sector be more competitive in the long term.

In 2013-14, the Ministry of Agriculture will provide more than $70 million for strategic initiatives through the federal-provincial Growing Forward 2 framework, an increase of $25 million over the previous framework. Areas of focus include rural water infrastructure, trade and market development and farm business management. I believe the renewed focus in these areas will help farmers and ranchers be more competitive and create long-term benefits. Further details of Growing Forward 2 programming will be announced in April.

Our government continues our commitment to agriculture research through a record-high $27.7 million research budget, an increase of 104 per cent since 2007. This includes a $3 million investment in the Global Institute for Food Security.

The 2013-14 Agriculture budget also includes $1 million for irrigation bridge rehabilitation to support the long-term growth of irrigation in the province. In addition, the provincial government will continue to provide industry assistance grants and funding to control pests, such as beavers, rats and gophers.

Agriculture continues to be one of the most promising sectors of our economy, and Saskatchewan farm and ranch families are the backbone of the industry. The initiatives in this budget will help provide balanced growth and long-term benefits for the industry and our province.

Sincerely,

Lyle Stewart

## STORY SNAPSHOTS

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Cover: Preparing for an ADOPT canola seeding speed project near North Battleford.

*Correction:* In the March Agriview article, *Growing the Vegetable Industry in Saskatchewan*, we should clarify that The Grocery People is a subsidiary of Federated Co-operatives Limited and that Saskatchewan-grown vegetables can be found at your local retail Co-op food stores, as well as Bigway and SuperA food stores across the province.


Government of Saskatchewan
Ministry of Agriculture

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**To view this publication online, visit www.agriculture.gov.sk.ca/programs-services.**

# Tips for calculating seeding rates

*by Sherrilyn Phelps, M.Sc., PAg, CCA*
*Regional Crops Specialist, North Battleford*
*Regional Services Branch*
*and*

*by Erin Campbell, MSc, AAg*
*Regional Crops Specialist, Watrous*
*Regional Services Branch*

Plant populations set the stage for the yield potential of the crop. Knowing what plant population to target is critical for calculating seeding rates. The optimum plant densities for various crops grown under average conditions in Saskatchewan can be found in Table 1. Other information needed prior to calculating seed rates is thousand kernel weight (TKW), seed germination, and expected seedling survival rate. TKW and germination can be obtained with a seed test or measured at home. Calculating the expected seedling survival rate is a bit harder, but as a guideline it is typically five to 20 per cent less than the germination rate. If soil conditions are not ideal, adjustments to the seedling survival should be made based on available moisture, temperature, seed quality, amount of seed-placed fertilizer and seeding date. Cereal survival rates can range from 80 to 90 per cent with germination greater than 90 per cent in good conditions. Survival is much lower in canola and ranges from 40 to 60 per cent in average conditions. In pulses, rates for survival can range from 80 to 95 per cent depending on conditions.

The following standard formula can be used to calculate seeding rates once you have determined the target plant population, TKW and expected seedling survival rate:

**Seeding rate (kg/ha) = (target plant population/m2 x TKW in grams) ÷ expected seeding survival**
(To convert to lbs/acre = seeding rate (kg/ha) x 0.89).

For example, canola with TKW of five grams, germination of 95 per cent, expected survival of 50 per cent and targeting 100 plants per square metre, we would calculate seeding rate as: (100 x 5) / 50 = 10 kg/ha or 8.9 lbs/acre.

**Table 1.** Target plant population and thousand kernel weight (TKW) in grams for various crops.

| Crop | Target Plant Population (per square metre) | TKW (grams) |
|---|---|---|
| Wheat – hard red spring | 250 | 31 - 38 |
| Wheat – CPS | 250 | 39 - 50 |
| Durum | 210 - 250 | 41 - 45 |
| Wheat – SWS | 210 - 250 | 34 - 36 |
| Barley – 2 row | 210 - 250 | 40 - 50 |
| Barley – 6 row | 210 - 250 | 30 - 45 |
| Oat | 215 - 320 | 30 - 45 |
| Triticale – spring | 310 | 42 - 48 |
| Canola | 80 - 100 | 2 - 3 (*Brassica rapa*)<br>2.5 - 7 (*Brassica napus*) |
| Flax | 300 - 400 | 5 - 6.5 |
| Pea | 85 | 125 - 300 |
| Fababean | 45 | 350 - 750 |
| Lentil | 105 - 147 | 30 - 80 |
| Chickpea | 44 | 220 - 440 |

Actual seeding rates can be adjusted higher or lower depending on field conditions, date of seeding, weed pressure, seed placed fertilizer and other pressures that may affect plant stand establishment. Experience with a specific crop on your operation is important and rates should be adjusted to what works on your farm.

FOR MORE INFORMATION

- Contact your local Saskatchewan Ministry of Agriculture Regional Office or call the Agriculture Knowledge Centre at 1-866-457-2377.

# GLYPHOSATE RESISTANT KOCHIA IN SASKATCHEWAN

*by Clark Brenzil, PAg*
*Provincial Specialist, Weed Control*
*Crops Branch*

Glyphosate resistant kochia was first discovered in Kansas in 2007. It was then found in South Dakota (2009), Nebraska (2011), North Dakota (2012) and Montana (2012). In January 2012, glyphosate resistant kochia was confirmed for the first time in Canada, in samples collected from several chem-fallow fields in southern Alberta. In the following growing season, several kochia samples were submitted from southwestern Saskatchewan that were exhibiting the tell-tale green lines trailing across an otherwise weed-free landscape. These samples have since been confirmed to be resistant to glyphosate as well.

There is an opportunity for producers to protect themselves against the spread of glyphosate resistant kochia. Success will require taking proactive management measures immediately to prevent the introduction and establishment of glyphosate resistant kochia, well in advance of it being noticeable in the field. By the time a resistant weed is visible in the field, it has been present for four to six years already, and is much more difficult to remove.

The best approach to take for prevention is to treat fields as though they contain glyphosate resistant kochia already and wherever possible apply glyphosate with a tank-mix partner that also controls kochia.

Situations where glyphosate cannot be applied in a mix include pre-harvest glyphosate applications and in-crop applications to glyphosate tolerant canola or soybean. However, *Edge* (Group 3) may be applied in advance of canola and soybean crops for in-crop control of kochia.

As with Group 2 herbicide resistance before it, glyphosate resistance in kochia will spread quickly if not managed proactively and by all land managers. When planning herbicide mixes, keep in mind that all kochia is resistant to Group 2 herbicides, eliminating them as potential tank-mix partners. Other herbicide options for controlling kochia can be found in the *2013 Guide to Crop Protection* at www.agriculture.gov.sk.ca/Guide_to_Crop_Protection.

FOR MORE INFORMATION

- Refer to the FAQ – Glyphosate Resistant Kochia on the Saskatchewan Agriculture website at www.agriculture.gov.sk.ca/FAQ; or
- Contact the Agriculture Knowledge Centre at 1-866-457-2377.

Tell-tale lines of glyphosate resistant kochia in fallow (photo: Pioneer Co op Ag Team)

# Soybeans in Saskatchewan

*by Dale Risula, PAg*
*Provincial Specialist, Special Crops*
*Crops Branch*

Interest in growing soybeans in Saskatchewan is increasing. At a recent Pulse Workshops held in February, a popular question among farmers was, "Can I grow soybeans in my area?" It is not an easy question to answer; however, it seems inevitable that soybean acreage is likely to increase in 2013.

Kevin Elmy is an advocate for growing soybean in Saskatchewan. Elmy has conducted soybean trials on his farm near Saltcoats for more than 11 years now and expects a good crop of soybean each year. Experience is a factor in his benefit and learning from Elmy is invaluable. Elmy indicated that variety selection is the most important factor determining whether to grow soybean or not. He likes the American method of variety selection using the "00" nomenclature rather than the Corn Heat Unit (CHU) method currently used in Canada. Elmy said he finds soybean equally sensitive to heat and daylight. So, it is imperative that you find a variety that will do best for your region using these criteria.

The 2012 season was very good for soybean production with plentiful heat units and an open fall without frost, but such weather is unlikely to occur every year. Soybean varieties require 120 days to mature and heat and daylight must be favourable for the crop to finish properly. Check your regional climatic data for average frost-free days.

Marketing soybean may be accomplished through grain brokers who deal with this commodity. There are brokers and buyers in Saskatchewan with information about pricing and delivery options.

Elmy says that most of the soybean grown in Saskatchewan is shipped to the United States. Buyers of food soybean look at quality factors such as: percentage greens, shape, cracked seeds, and un-threshed pods in the sample.

Although not a pulse crop, soybean is included within the pulse crops that the Ministry supports. The Saskatchewan Pulse Growers (SPG) also include soybean under their umbrella of interest.

Currently, the Crop Development Centre (CDC) in Saskatoon experiments with soybean and is looking for new sources of germplasm to develop varieties better suited for Saskatchewan conditions.

FOR MORE INFORMATION

- Contact Dale Risula, PAg, Special Crops, Plant Industry Section at (306) 787-4665 or email Dale.Risula@gov.sk.ca.

Kevin Elmy in a soybean field at his farm near Saltcoats.

# PRESEEDING CONTROL OF VOLUNTEER CANOLA

*by Clark Brenzil, PAg*
*Provincial Specialist, Weed Control*
*Crops Branch*

Heavy winds during last fall's harvest, including swaths rolling into neighbouring fields, resulted in heavy shattering in canola that will provide a seed source for volunteers to emerge in 2013 and possibly into 2014. In addition, a small amount of outcrossing can occur normally between varieties with two different herbicide tolerant (HT) traits growing in close proximity. This can result in some volunteers carrying a combination of HT traits. Canola acreage is roughly split between glyphosate-tolerant canola and glufosinate-tolerant (*Liberty Link*) varieties with a small proportion of imidazolinone (*Clearfield* – Group 2) tolerant varieties. Between outcrossing and rolling swaths, canola fields may have volunteers with two different herbicide tolerance (HT) traits emerging in the same field. Even fields that did not grow canola in 2012 may have ample volunteer canola emerging because of rolling swaths. Since the risk of glyphosate-tolerant volunteers is very high, mixing other herbicides with glyphosate during the pre-seed burn-off will be more effective.

Several glyphosate labels can be mixed with many different herbicides for use with a wide range of crops (see the *2013 Guide to Crop Protection* - page 183 for details). Group 14 herbicides are relatively new to Saskatchewan and there are several pre-seed products (carfentrazone – *Aim, CleanStart, Authority Charge, BlackHawk;* saflufenacil – *Heat;* flumioxazin – *Valtera, Chateau*) that, depending on the crop being seeded, are available as a mix with glyphosate and are effective for volunteer canola control.

Volunteer canola can germinate early in the season. Research at the University of Saskatchewan has shown that, similar to in-crop weed control, early control of weeds growing prior to seeding produces a significant yield benefit. With the potential for volunteer canola emerging in high numbers this spring, timely control, with both pre-seed and in-crop herbicides, will be important to protect the yield of seeded crops. Two burn-off herbicide applications, one when volunteer canola is in the two-to-four leaf stage and again just prior to seeding, may be needed if volunteer canola density is high.

FOR MORE INFORMATION

- On herbicide choices, see the *2013 Guide to Crop Protection* at www.agriculture.gov.sk.ca/Guide_to_Crop_Protection; or
- Contact the Agriculture Knowledge Centre at 1-866-457-2377.

Early control of weeds provides a significant yield benefit.

# Crop scouting through the growing season

*by Brent Flaten, PAg, CCA*
*Integrated Pest Management Specialist*
*Regional Services Branch*

Timely crop scouting is a crucial part of crop management. Whether you scout fields yourself or hire someone to do it, frequent crop scouting during the growing season can help you manage crop establishment issues and control weeds, diseases and insects.

The process starts prior to seeding, especially if you direct-seed. Correctly identify weeds in the field and their growth stages to determine which burn-off herbicides to use and the appropriate rate.

Brent Flaten, Integrated Pest Management Specialist, scouting peas.

After seeding, assess crop stand establishment. Poor plant stands can be a result of many factors. Scraping back the soil when the crop is emerging can reveal underground symptoms of deep seeding, surface crusting or seedling blights. Seedlings can be killed by early season insects such as cutworms, wireworms or flea beetles. Spraying early season insect pests can rescue the crop if caught soon enough. Damaged seedlings can dry up and disappear quickly, so timely and frequent field scouting is critical to determining the cause and possible solutions to establishment issues. If crop establishment is poor, consider all the factors and decide whether or not to reseed.

Repeated in-crop scouting for weeds, diseases and insects is necessary to protect the crop once established. Before applying pesticides, consider the economic thresholds and the best time for maximum control. After spraying a pesticide, do a post-spray audit to assess how the pesticide performed. For example, after herbicide applications, producers should scout the field for both weed control performance and crop injury issues. Typically, scouting should occur one or two weeks after application. If the weeds are not completely dead, look for symptoms of herbicide activity such as yellowing, purpling, twisting, cupping or bleaching. Timely post-spray audits may give you enough time to perform a rescue treatment if necessary. Be aware of field re-entry restrictions when using any pesticide. Also follow the pre-harvest interval; which is the time between applying the herbicide, fungicide or insecticide and cutting the crop.

FOR MORE INFORMATION

- Contact the Agriculture Knowledge Centre at 1-866-457-2377; or
- Contact a Regional Crop Specialist in your area.

## NEW CROP SPRAYER AND NOZZLE FACTSHEETS AVAILABLE

*by Brent Flaten, PAg, CCA*
*Integrated Pest Management Specialist*
*Regional Services Branch*

Updated sprayer and nozzle factsheets authored by Dr. Tom Wolf are now posted on the Saskatchewan Ministry of Agriculture website. Dr. Wolf is recognized as an expert on sprayer and nozzle technology.

One of the factsheets covers the AIM Command and Capstan Sharpshooter spray systems. The AIM Command and Capstan Sharpshooter are the same technology and made by the same company. The system allows for more precise rate and droplet size control than conventional rate control systems. The traditional use of spray pressure to control nozzle output is replaced by the duty cycle of a pulsing solenoid.

Another factsheet discusses top questions asked by producers about nozzles. Dr. Wolf addresses a number of topics including: deciding which low-drift nozzles to use on a sprayer, how air-induction nozzles compare to low-pressure nozzles, what pressures are needed for air-induced nozzles and which way to point nozzles.

Minimizing spray drift is very important from an economic and environmental point of view. Dr. Wolf discusses factors that govern spray drift risk and how to manage those risks with sprayer settings, spray droplet size, travel speed, boom height, shrouds and air assist. Other important considerations include the potential vapour drift and buffer zones of each product being sprayed. Common courtesy such as discussions with neighbours, can help avoid problems later on.

FOR MORE INFORMATION

- Access the factsheets at www.agriculture.gov.sk.ca/sprayer-nozzles.

# Are you prepared for spring flooding?

Farm and rural households are important members of a municipality and need to be aware of the potential risks in their community and how they might better prepare to manage when disaster strikes. The potential threat of flooding this spring highlights important aspects of emergency preparedness, and residents should ask themselves some basic questions:

- Am I prepared to be self-sufficient for up to 72 hours if the disaster strikes and outside help is not readily available?
- If there is flooding in our area, how might it impact my property? Have I taken a good look around my property to identify potential risks or impacts?
- Have I done everything possible to minimize the impact of flooding if it comes? Such as moving equipment or stockpiling a bit of sand or gravel?
- Do I have any sensitive systems or equipment that might need special protection?
- Are all my important documents and cherished family items protected in case the water reaches the house? Is there anything in the basement that should be lifted off the floor or moved upstairs?
- Do I need to build up some earth protection or do some sandbagging in low areas?
- Do I have a back-up plan if I am forced to leave my home and property for a time?

The Water Security Agency has identified that spring runoff potential for most of southern Saskatchewan will be above normal or higher this year.



## PROTECTING LIVESTOCK DURING A FLOOD

*by Dr. LeeAnn Forsythe, DVM, MVetSc*
*Disease Surveillance Veterinarian*
*Livestock Branch*

Climatic extremes, such as excessive moisture, can cause major challenges for agricultural operations in Saskatchewan.

In the event of a flood, preparedness for livestock producers requires examination of a wide range of management practices. Although preparedness for each producer may vary due to location, experience, resources and type of operation, there are some common steps to take. These include:

1. **Identify emergency resources**: In case of a flood, have emergency plans in place to protect your livestock. The plan should include a list of telephone numbers that may be needed before, during or after the flood.
2. **Ensure animal identification:** Visible identification is needed even if animals are not transported. Livestock can be identified if they escape to another pasture.
3. **Restrict access to dangerous areas:** Move livestock to higher ground and deny access to flood prone pastures, barns or other shelters. Livestock drown because they refuse to leave flooded shelters. Move livestock before floodwaters start to rise. Rescuing livestock in deep, freezing water and ice is dangerous for the livestock owner.
4. **Supply food and water:** The emergency plan should include options for feeding and watering animals if existing resources are contaminated during a flood. Trucking water into holding areas may be required. Move feed to higher ground ahead of the flood. It will be easier to remove snow to access feed than trying to access it during a flood.
5. **Remove potential contaminants:** Flood waters often contaminate soils, animal feed supplies and fresh water sources by carrying chemicals, fertilizers, trash and other debris from their original containers. Label all hazardous materials and place them in a safe location.
6. **Check for fire hazards:** Plan to remove all fuels and turn off electricity to barns and buildings.

FOR MORE INFORMATION

- Contact the Agriculture Knowledge Centre at 1-866-457-2377; or
- Contact the Saskatchewan Society for the Prevention of Cruelty to Animals at 1-877-382-7722; or
- Contact the Farm Animal Council of Saskatchewan at (306) 249-3227; or
- Contact the Saskatchewan Water Security Agency at (306) 694-3900.

Options are available to protect animals during flooding.

# Patrons prepare to operate federal community pastures

*by Todd MacKay*
*Policy Advisor*
*Lands Branch*

Patrons of federal community pastures are making steady progress as they move toward taking responsibility for their pastures. Patrons are the priority for the Saskatchewan Government and Ministry of Agriculture officials are working with patron groups through every step of the process.

Hundreds of pasture patrons attended five informational meetings that Ministry officials hosted across the province in February. The meetings took place in North Battleford, Kindersley, Watrous, Weyburn and Shaunavon. The meetings included in-depth presentations outlining the transition process and extended question-and-answer sessions.

Federal community pasture patrons are moving forward with operation plans.

As patrons evaluate their options, economic factors are a key consideration. Ministry officials have shared estimated valuations of both land and improvements for each of the first 10 pastures that will be transitioned after the 2013 grazing season. However, all pasture groups will have the opportunity to consider the valuations for their pastures. If a patron group is interested in purchasing their pasture, third-party appraisals will be provided.

For many pastures, leasing may be the more economical option. That option is available to all patron groups. The length of leases offered has been a key question raised by many patron groups. The Ministry of Agriculture has now confirmed that leases up to 15 years will be available for patron groups.

The Saskatchewan Government is providing support to patron groups as they create management plans for their pastures. The Saskatchewan Farm Business Development Initiative will provide up to $120,000 for each patron group to build business plans, create new legal entities (such as a patron-controlled grazing corporation or cooperative), develop environmental management strategies and receive technical training. Costs incurred by patron groups for these activities will be reimbursed up to 75 per cent to a total of $120,000.

Saskatchewan farmers and ranchers are proud stewards of the land and the Saskatchewan Government is confident that these lands will be in good hands after the transition. Producers themselves have called for conservation easements to ensure that native prairie land is not broken or drained.

The federal government announced its decision to discontinue the Canada Community Pasture Program in the spring of 2012.

FOR MORE INFORMATION

- Contact Lands Branch at (306) 787-5322.

## FORAGE VARIETIES FOR SASKATCHEWAN

*by Linda Hunt, AAg*
*Regional Forage Specialist, Prince Albert*
*Regional Services Branch*

*and*

*by Allan Foster, PAg*
*Regional Forage Specialist, Tisdale*
*Regional Services Branch*

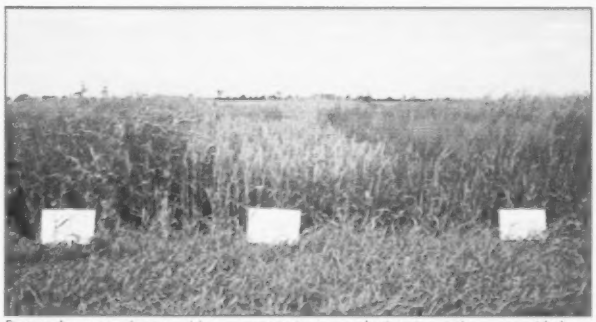
Deciding what to plant can be a daunting task, particularly in Saskatchewan where there are so many forage crops to choose from. The Ministry's Forage Crop Production Guide is a great resource to get you started. It contains descriptions of the various grasses and legumes typically grown in Saskatchewan, along with agronomic considerations. The guide has information on seeding rates, forage mixtures for problem soils, seeding techniques for different times of year, selecting annual forages for swath grazing or green feed and much more.

There will also be several hands-on learning opportunities to view forage crops during the growing season. Perennial forage demonstration plots containing between 36-50 perennial forage grasses and legumes varieties were seeded in 2012 at both the Craik Ecocenter and the Northeast Agriculture Research Foundation at Melfort. One more site is scheduled to be seeded at the Conservation Learning Center near Prince Albert this spring. These sites will offer an excellent opportunity for producers to see and compare forage varieties at a local level.

Similar opportunities continue to exist for annual forage crop demonstration plots. This spring, a number of Agri-ARM sites have again applied for the Agricultural Demonstration of Practices and Technologies (ADOPT) funding to put in demonstrations of annual forages including corn, triticale, millet, barley and oats. Plot tours will be organized during the growing season, providing an excellent opportunity for anyone wanting to see side-by-side comparisons of locally grown annual forages. One of these locations, the Conservation Learning Center near Prince Albert, will be hosting a forage field day in August 2013, and will include topics on invasive weeds, sod seeding and establishing perennial forages.

FOR MORE INFORMATION

- Contact your local Regional Forage Specialist; or
- Visit www.agriculture.gov.sk.ca.



Forage demonstrations provide an opportunity to see the latest varieties grown side-by-side.

# New factsheet offers tips on exporting hay to the U.S.A.

*by Lorne Klein, PAg*
*Regional Forage Specialist, Weyburn*
*Regional Services Branch*

Trucking hay long distances to the United States of America (U.S.A.) and eastern Canada has become more economically viable in recent years. This is mainly due to recent droughts causing hay prices to increase significantly and the availability of trucks looking for backhaul freight.

The Saskatchewan Ministry of Agriculture has a new publication called "Hay Export and Trucking to the USA" developed specifically for first-time hay sellers and exporters. It includes basic information on markets, hay packaging, trucking regulations, trailer options and measurements, export administration and getting paid when selling hay to the American market.

Most American hay buyers have two basic demands. First, the majority of the market wants high percentage or pure alfalfa hay. Second, the hay needs to be packaged in large square bales for ease and economy of trucking. Trucking costs range widely from $2 to $5 per loaded mile, mainly depending upon load width and availability of backhauls.

There are a surprising number of large square bale height and width dimensions, depending upon the baler manufacturer and model number. The dimension options are listed in the publication and each of them has advantages and disadvantages. Large squares can be stacked so the load width is eight feet, allowing for travel at night.

Also surprising is the number of ways bales can be arranged on the different trailers to maximize the weight and still remain within the height and width restrictions. The publication has pictures showing unique arrangements. Trailer type and dimensions will determine how bales can be arranged.

It is critical that the trucker knows the load height, width and weight restrictions for each state and each highway that will be travelled. Over-height and over-width permits can be purchased, but travel is not allowed at night or during specific days of the year.

When hay is imported into the United States, it is subject to certain processes involving U.S. Customs and Border Protection. The paperwork is not difficult but it must be completed properly, otherwise you run the risk of being rejected at the border. The publication includes details on the proper procedures and websites for information.

Assurance of being paid is a prime issue for the seller. The publication offers suggestions to reduce or eliminate the risk of not being paid.

Producing, marketing and exporting hay to the U.S.A. requires an investment of planning, time and effort to increase the probability of success. The Ministry's new factsheet makes the process a little bit easier.

FOR MORE INFORMATION

- Visit www.gov.sk.ca/hayexport.

## SASKATCHEWAN PASTURE SCHOOL RETURNS FOR 10TH SEASON

*by Lorne Klein, PAg*
*Regional Forage Specialist, Weyburn*
*Regional Services Branch*

The Saskatchewan Pasture School is back for its 10th season June 18 and 19, 2013. The program is based out of Weyburn and features the Big Muddy Badlands region, with its rich and intriguing history, for the field tour. This year, the school is co-operating with Native Prairie Appreciation Week and the Society for Range Management (SRM), which is holding its 15th annual tour.

The school is a great opportunity for producers, grazing managers, professional staff and nature enthusiasts to gain practical knowledge and expand their pasture management skills. The two-day event is filled with hands-on learning, both in the classroom and the field. Participants also get many opportunities to network.

This year, the school will feature both common and concurrent sessions during classroom presentations and field exercises. Day one begins in Weyburn, with buses departing for field tours in the Big Muddy Badlands. Day two offers classroom presentations in Weyburn. Participants can choose between two sessions: one a more hands on, practical application approach and the other a more technical, science/issues based session.

Topics and tour stops for ranchers include a look at soil profiles and properties, weed management, watering systems, native pasture management, tame pasture rejuvenation, plant identification, handling systems and winter feeding site management. Stops for professional staff include a visit to a local coal mine, mine site reclamation, rare plant and species-at-risk management and the plant identification competition.

Attendance is limited to 100 people so please register early to ensure you get a spot. The cost is $190 for producers and SRM members, and $250 for professional and agency staff.

The Saskatchewan Pasture School is a joint exercise of the Saskatchewan Ministry of Agriculture, Agriculture and Agri-Food Canada, Ducks Unlimited Canada, the Prairie Conservation Action Plan, the Saskatchewan Forage Council, the Saskatchewan Water Security Agency, the Society for Range Management and the University of Saskatchewan.

A detailed agenda and the registration form are available on the Saskatchewan Forage Council website at www.saskforage.ca and the Ministry of Agriculture website at www.agriculture.gov.sk.ca.

# Anthrax: Plan now

*by Betty Althouse*
*Chief Veterinary Officer*
*Livestock Branch*

Anthrax is an infectious disease occurring primarily in grazing animals. Death can occur very rapidly and the first clue of anthrax infection is often animals found suddenly dead on pasture. In the past, the Canadian Food Inspection Agency (CFIA) responded to anthrax cases with various control activities and support. As of April 1, 2013, the CFIA will no longer respond to anthrax cases.

What does this mean to producers and veterinarians? Prevention is even more important and a plan for diagnostics and disposal should be in place on every farm.

Anthrax vaccination is very effective in preventing infections. The risk of anthrax should be assessed for each premises by looking at geographic location, information on past cases, weather patterns and species raised. Historically, sporadic cases have occurred across the prairies and there are pastures where anthrax cases are known to have occurred in the past. **Where risk of anthrax exists, anthrax vaccination is recommended three to four weeks before exposure.**

Early detection is important to reduce deaths. Animals on pasture should be observed regularly and if unexplained deaths occur, veterinary advice should be sought. If anthrax is suspected, the veterinarian will submit samples to a laboratory for testing. In cases of anthrax, post mortems should be avoided or done very carefully to reduce contamination. When anthrax bacteria are exposed to air, they form resistant spores that can survive for decades in soil. When these spores are eaten by grazing livestock, disease and death can occur, and the cycle continues.

While vaccination is the key to prevention, proper carcass disposal is the key to control. Carcasses should be protected from scavenging, which spreads spores over a wide area. Covering carcasses with heavy plastic can deter predators and is a useful temporary measure. Complete burning of carcasses is the preferred disposal method, as high temperatures will destroy anthrax spores. Burial can be used when burning is not possible, but spores will remain viable and can be a source of further infections if they are exposed by digging, flooding or erosion in the future.

FOR MORE INFORMATION

- Visit www.agriculture.gov.sk.ca/anthrax_FAQs; or
- Consult your local veterinarian.

## SPRING HORSE HEALTH REMINDERS

*by Dr. Wendy Wilkins, DVM, PhD*
*Disease Surveillance Veterinarian*
*Livestock Branch*

**Equine Infectious Anemia**

Clinic, show and event season has arrived and horse owners are reminded to have their horses tested for Equine Infectious Anemia, also known as "swamp fever". Between 2002 and 2010, there were only six cases detected in Saskatchewan horses. The decrease in Equine Infectious Anemia led many in the equine industry to believe this disease was no longer a problem in the province. This was untrue. In 2011, more than 100 horses were infected and, in 2012, 82 cases were confirmed.

Transmission of Equine Infectious Anemia occurs through the transfer of contaminated blood from one animal to another. Insects, such as horse flies and deer flies, aid in the spread of the disease. There is no vaccination to prevent Equine Infectious Anemia and there is no cure. Once infected, horses remain carriers for life. It is essential that all horses be tested to identify carrier animals and prevent the further spread of this disease.

**West Nile Virus**

Horse owners are reminded to vaccinate their animals for West Nile virus this spring. West Nile virus is a mosquito-borne virus that can cause inflammation or swelling of the brain and spinal cord in horses, birds and humans. The virus is spread through the bites of infected mosquitoes. Mosquitoes become infected as they feed on infected wild birds such as crows, blue jays, magpies and ravens.

Last summer, the number of infections in horses increased compared to recent years.

Since 2007, there have been between one and three confirmed cases per year; however, in 2012, Prairie Diagnostic Services Inc. confirmed 11 cases of West Nile virus in horses in Saskatchewan. Many of these horses developed neurological disease and either died or were euthanized due to the severity of the disease. There is concern that the incidence of West Nile virus will continue to rise in the summer of 2013. Control of biting insects and vaccination for West Nile virus is strongly recommended for all horses.

FOR MORE INFORMATION

- Visit www.agriculture.gov.sk.ca/eia;
- Visit www.agriculture.gov.sk.ca/West_Nile_Virus_Horses; or
- Consult your local veterinarian.

Vaccination and disease testing helps protect your horses from disease.

# A new tool for alfalfa pasture management

*by Trevor Lennox, MAg, PAg*
*Regional Forage Specialist, Swift Current*
*Regional Services Branch*

Alfalfa is one of the most productive and nutritious forages available, yet it has seen limited use on pastures due to its potential to cause frothy bloat. Over the years, producers have adopted many bloat-reducing techniques for grazing fields with a high percentage of alfalfa. While some of these techniques have proven very effective, the risk of bloat remains.

A new water soluble product called Alfasure has recently come onto the market which is designed to further reduce the risk of bloat when grazing alfalfa pastures. The product is administered through drinking water and, as long as cattle consume the product, it is very effective at reducing the potential for frothy bloat.

In order for Alfasure to be effective, other water sources need to be fenced off and water intake needs to be monitored. The product contains a red dye and stays in suspension once mixed. The active ingredient is Poloxalene and no withdrawal period is required for cattle when treated according to the label. The product cost ranges from 15 cents per day for yearlings to 25 cents per day for cows. The product is sold by Rafter 8 and is available through veterinary offices.

This new water-soluble tool for managing bloat will allow alfalfa to increase its potential for use on pastures in Western Canada. By using high yielding varieties of alfalfa and rotational grazing, we can substantially increase stocking rates on our pastures, while at the same time realizing tremendous daily gains when grazing alfalfa pastures.

FOR MORE INFORMATION

- Contact your local Regional Forage Specialist;
- Call the Agriculture Knowledge Centre at 1-866-457-2377;
- Visit Rafter 8 at www.rafter8.ca; or
- Contact your local veterinarian.

Alfasure reduces the risk of bloating when grazing alfalfa.

# LIVESTOCK EMERGENCY RESPONSE COURSE: BUILDING STRONGER NETWORKS TO ENSURE LIVESTOCK CARE

*by Dr. LeeAnn Forsythe, DVM, MVetSc*
*Disease Surveillance Veterinarian*
*Livestock Branch*

Livestock emergencies can be very challenging, involve many stakeholders and cause public concern and scrutiny. Accidents involving livestock trailers are often confusing and dangerous. Responding properly to an accident with trained personnel can improve the response.

Livestock emergencies involving accidents (ie: trailer rollovers) and disasters (ie: barn fire) require a coordinated and knowledgeable approach between first responders (ie: firefighters, police), producers, veterinarians, government and volunteers. To improve preparedness, coordination and response to livestock emergencies, a network of knowledgeable responders are required to ensure the safety of the responders and the welfare of the livestock.

The Animal Health Unit in the Ministry of Agriculture's Livestock Branch organized an emergency response course given by livestock handling specialist Jennifer Woods of J Woods Livestock Services. Woods has a degree in Animal Science and has worked with Alberta Farm Animal Care to respond to a need identified by local community emergency teams, RCMP, livestock owners, processing facilities and humane societies to develop an emergency response course.

The livestock emergency response course was held in Regina at EVRAZ Place on March 4 and 5, 2013. The first day was a classroom session covering topics such as general and species specific animal behaviour and handling, responding to motor vehicle accidents involving livestock, rescue, fires, laws, incident command, injured animals and euthanasia.

The second day was a practical session held inside the Stockman's arena. Participants experienced the handling and capture of cattle and sows, hog trailer design, extrication equipment and euthanasia. Regina firefighters were able to demonstrate the equipment that would be used to cut open a trailer that rolled on the highway.

This course provided an opportunity to build awareness for livestock emergency preparedness and a stronger network of first responders, especially in the Regina area. Other communities in Saskatchewan have expressed interest in holding similar events. Participants were very enthusiastic about the course and thought both the classroom and hands-on training was essential for strengthening their livestock emergency preparedness network.

FOR MORE INFORMATION

- Contact Dr. LeeAnn Forsythe at (306) 787-6069.

Producers and first responders gather to discuss how to safely deal with livestock emergencies.

# Finding new industrial uses for lower-grade vegetable oil

As all farmers know, disease and adverse weather can reduce a promising crop by several grades, leaving the producer to find a market for the lower-quality product. Typically, the lower-grade crops are sold as livestock feed.

While the oil from lower-grade or damaged canola may not be suitable for the human food market, it can be turned into a variety of biofuels and biolubricants. Unfortunately, these canola-based products currently do not have a significant share of the market, in part, due to their higher manufacturing costs and less-desirable physical and chemical properties compared to petroleum-based products.

Until now.

Recent work by the Ministry of Agriculture's Strategic Research Program (SRP) Chair for Lipid Quality and Utilization at the University of Saskatchewan, Dr. Martin Reaney, with financial support from the Agriculture Development Fund (ADF), has developed new processing technology that improves both the production efficiency and the effectiveness of the potential biolubricant end-product.

Canola oil contains glycerol, which makes its products prone to breaking down under extreme heat and to coagulate under extreme cold. When it is converted into biodiesel the glycerol is removed. The biodiesel can be converted into biolubricants with superior properties. A chemical catalyst is used to produce the stable polyol biolubricant.

The chemical currently being used as a catalyst – an alkoxide – is expensive and hazardous to transport. The goal of the project was to find a better way to synthesize a superior polyol-based biolubricant. The researchers discovered that potassium carbonate – a component of potash – is a highly cost-effective replacement for the current catalyst.

As an added benefit, they found a way to turn linoleic acid, trapped in by-products of biodiesel production, into conjugated linoleic acid, a compound found in meat and dairy products that may help fight cancer.

Lower-grade or damaged canola, such as this frost-damaged sample, is unsuitable for human consumption but can be turned into a variety of biofuels and biolubricants.

The researchers also determined the oilseed genetics that produced biodiesel and biolubricant with the best possible cold-flow and pour-point characteristics. This is important if the eventual products are to be used in colder climates such as Saskatchewan. The information was passed on to oilseed breeders so they can develop varieties specifically for processing into bio-based petroleum replacement products.

The work of the University of Saskatchewan on this project has benefits for a variety of industrial sectors. Biofuel producers have a more cost-effective way of producing biolubricants, and they have a new market for a previously valueless by-product. Plant breeders have the data to develop new varieties specifically for the biofuel industry. And canola producers should find better demand for their lower-grade crops in the biofuel sector.

The Agriculture Development Fund provides funding to institutions, companies and industry organizations to help them conduct research, development and value-added activities in the agriculture and agri-food sector. The results produce new knowledge, information and choices in technologies, techniques and varieties for farmers, ranchers, processors and input suppliers, to improve the competitiveness of Saskatchewan's agriculture sector.

In 2013, the Saskatchewan Ministry of Agriculture committed $9.9 million in new funding for 61 ADF research projects.

FOR MORE INFORMATION

- Visit the Saskatchewan Agriculture research reports page at www.agriculture.gov.sk.ca/ADF/search and enter the report number #20070185 into the search function.

New processing technology will help make biofuels and additives more competitive with petroleum-based products in both cost and quality.

# Discover Agriculture in the City 2013

*by Agriculture and Agri-Food Canada*

*Discover Agriculture in the City* will take place on Saturday, April 13, 2013, at Saskatoon's Lawson Heights Mall on Primrose Drive. Beginning at 9:30 a.m., this second edition of Agriculture in the City will bring agricultural knowledge to urban centres in a fun and family-friendly way.

Participants will have the opportunity to speak to the many producer groups represented at the event, learning about everything from beef and honey to pulses and pork. They will explore how agriculture impacts their daily lives, and how the food on their dinner tables begins with the fields of Saskatchewan. They will also learn about some innovative non-food uses for Saskatchewan agriculture commodities.

Urbanites will hear the story of agriculture and see how it is an industry that is strong, diverse and provides many opportunities for promising careers. Awareness fosters public support for producers and for science-based regulation. With public and consumer support, Saskatchewan agriculture will continue to grow in a sustainable manner, keeping farmers productive, profitable and competitive on a world-scale.

Feel free to join Agriculture in the City and bring along your city friends to attend the festivities, including:

- Cooking demonstrations using Saskatchewan-grown ingredients;
- Family game shows;
- An interactive kids' corner with activities for all ages; and
- Demonstrations on how Saskatchewan crops are being used for food and non-food uses.

*Discover Agriculture in the City* is a non-profit organization made up of Saskatchewan commodity groups as well as federal and provincial governments.

FOR MORE INFORMATION

- Visit www.celebrateagriculture.ca.

Last year's edition of *Discover Agriculture in the City* was held at the Saskatoon Farmer's Market.



## GROWING FORWARD 2 – CONSULTING STAKEHOLDERS

*by Jonathan Greuel*
*Assistant Director*
*Policy Branch*

In September 2012, the federal, provincial and territorial Ministers of Agriculture met in Whitehorse, Yukon to discuss details of a new five-year agricultural policy framework called Growing Forward 2 (GF2). On January 3, 2013, Saskatchewan officially signed the Multilateral Framework Agreement.

The federal and provincial governments then turned their attention to details of GF2 programming and to strategic investments in Saskatchewan. Over the past three years, through a series of both formal and informal consultation sessions, the Ministry has gathered a significant amount of feedback about what has worked in the original Growing Forward framework, and what areas could be improved to better serve stakeholders. The consultation process was valuable and assisted the Ministry in attempts to balance the needs of the sector with available funding and with national parameters set for the agreement.

As part of this ongoing process, a stakeholder consultation was held in Regina on January 22, 2013. A total of 64 individuals attended, representing 50 commodity and industry groups. The event opened with Agriculture Minister Lyle Stewart speaking to the potential in our province's agriculture sector and how GF2 strategic initiatives will complement the provincial Growth Plan. Minister Stewart spoke of GF2 as a comprehensive suite of programming that focuses on innovation and that will help producers be more productive, more profitable and more competitive.

The second half of the session included roundtable discussions where Ministry program leads provided further details and participants were able to provide direct feedback. In addition, written submissions have been received from several organizations and the Ministry initiated a web-based consultation to provide an opportunity for the public to submit comments on proposed programming.

As a result, the final framework of GF2 programming has been developed and is expected to be signed by Saskatchewan and the federal government with programming coming into effect on April 1, 2013.

FOR MORE INFORMATION

- Visit www.agriculture.gov.sk.ca/GrowingForward2.

Growing Forward 2

A federal-provincial-territorial initiative

Growing Forward 2

# 2013 AgriStability Program - Enrolment deadline

The 2013 AgriStability Program contains a number of changes and, as the deadline draws near for enrolment, producers are encouraged to get more details.

April 30, 2013, is the initial deadline for most producers to pay their program fees and continue their participation in the AgriStability Program. This deadline is the same as in previous years, but changes have been made to how AgriStability benefits are calculated, which producers should be aware of as they sign up for the 2013 program.

Lower program fees, 70 per cent margin coverage, harmonized compensation rates and limited reference margins have been incorporated for the 2013 program year. Producers are encouraged to review these adjustments as they determine their enrolment. SCIC has information available online at www.saskcropinsurance.com and can meet with producers to discuss the impact on their individual farm's coverage.

To remain enrolled, participants have until April 30, 2013, or 30 days from the date on their Enrolment/Fee Notice, whichever is later, to pay their program fee without penalty. If program fees are not paid by the deadline date, a 20 per cent penalty is added, which must be paid by December 31, 2013.

Producers who want to participate in AgriStability for the first time or wish to re-join the program must request a New Participant Package by April 30, 2013. Participants who wish to cancel their participation in AgriStability must also do so by April 30.

For more information about AgriStability, the 2013 program changes, or to access additional support, producers can contact SCIC:

- at their local Crop Insurance office;
- online at www.saskcropinsurance.com; or
- by calling toll-free 1-866-270-8450.

## PRODUCERS' GUIDE TO PREDATION COMPENSATION

Saskatchewan is a vast territory home to many predators, including coyotes, bears, cougars, foxes, wolves and birds. For producers, these predators pose a challenge to raising livestock, fowl and specialty animals.

The Saskatchewan Crop Insurance Corporation (SCIC) offers 100 per cent compensation for the confirmed death of livestock, fowl or specialty animals due to predation through the Wildlife Damage Compensation Program. Compensation is eligible for predation by the previously mentioned animals or any other wild animal that causes the death of eligible livestock.

To ensure the accountability and integrity of the program, SCIC has developed policies and procedures. An inspection must occur in order for compensation to be paid. This inspection consists of an adjuster visiting your farm or pasture and assessing the evidence present, including carcass, attack or kill site and presence of a predator.

Generally, two-thirds of a carcass should be present to evaluate the attack. SCIC needs to determine the animal was alive prior to the predator attack. An adjuster is trained in determining whether the death was the result of a predator attack or another cause, such as stillbirth, illness or other preventable factors. Compensation may not be paid without this evidence.

So what if there is little to no remains of the animal? Adjusters will review the evidence present. There must be sufficient evidence to prove a predator attack. If evidence is inconclusive, but the probable cause is a predator, producers will receive 50 per cent compensation. Without a carcass or evidence, no payment will be issued.

Please note, SCIC also provides compensation if animals are injured in an attack. Up to 80 per cent of the animal's value may be provided to cover veterinary costs.

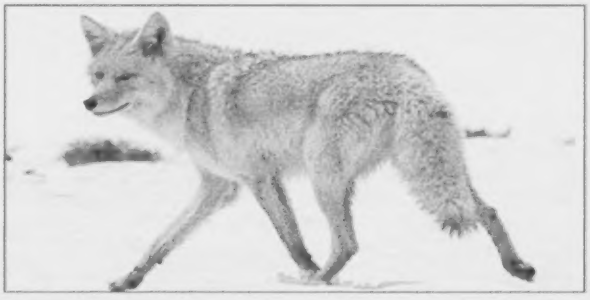
**What is expected from farmers and ranchers?**

- Contact a Crop Insurance office as soon as a predator attack is discovered.
- Preserve any evidence of an attack for an adjuster to inspect.
- Take photos to record any evidence of an attack.
- Follow recommended preventative measures to reduce problem wildlife. SCIC offers compensation to purchase a guard dog.

If predators continue to pose a problem, an adjuster may recommend a predation specialist eliminate the predator problem. Predation specialists are experienced hunters and trappers who can also provide advice to help protect livestock from further attacks.

FOR MORE INFORMATION

- Contact your nearest Crop Insurance office;
- Call 1-888-935-0000; or
- Visit www.saskcropinsurance.com/wildlife.



# AgriMap-SK: Mapping out a new direction

*by Erl Svendsen, MSc.*
*Senior Environment Resource Specialist*
*Agriculture and Agri-Food Canada*

Producers can now add a new tool to their toolbox; AgriMap will help make land use decisions simpler and more effective.

Developed by Agriculture and Agri-Food Canada (AAFC), AgriMap is an easy to use, free, online mapping application that gives land managers a bird's eye view of the landscape.

This up-to-date, high resolution aerial and satellite imagery, plus soils, land cover and water information, helps producers to see existing buildings, storage bins and dugouts on their property. By understanding how different landscape features relate to one another, land managers can gain a better sense of where to implement beneficial management practices.

By viewing the landscape from a different perspective, users can see beyond property lines. This allows land managers to undertake more comprehensive planning and to make more informed land lease and purchase decisions. In addition, users can upload their own data, for example the locations of noxious weeds, in order to develop an effective control program. Knowing the exact area of a field helps to determine how much seed, chemical, fertilizer or pesticide to apply, and with the buffer tool you can map out areas to avoid when applying chemicals.

The most popular feature is the fencing tool. It allows users to draw out a fence on their property, fill in a few parameters, like length and cost per roll of wire, distance between posts, and cost per post. The calculator will then determine total distance of fence, total costs, and cost per unit, either in imperial or metric.

Users do not need any specialized skills, knowledge or software. With a few simple mouse clicks, you can be on your way to creating customized maps of your farming operation or project area.

FOR MORE INFORMATION

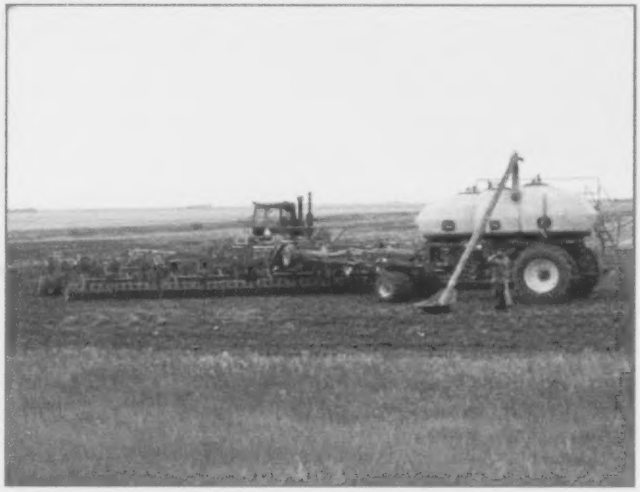
- Contact Erl Svendsen, AAFC, at (306) 975-4142 or by email at [illegible]; or
- Visit www.agr.gc.ca/agrimap-eng.

## ON THE WEB

Saskatchewan Agriculture is constantly updating the wealth of information it makes available to Saskatchewan residents. You can download the most current version of any document posted on our website. You can also call the Agriculture Knowledge Centre at 1-866-457-2377 to request a hard copy of many items.

**Online features**
The Ministry website has two online features to keep you up-to-date on what is happening in Saskatchewan agriculture. The online calendar at www.agriculture.gov.sk.ca/Calendar houses the most current list of events. You can also sign-up to receive a variety of Ministry publications at www.agriculture.gov.sk.ca/sign-up.

An updated version of the Guidelines for Safe Rates of Fertilizer Placed with the Seed factsheet is now available at www.agriculture.gov.sk.ca/safe-rates-of-fertilizer.



## EVENTS CALENDAR

| DATE | EVENT | LOCATION | PHONE | INTERNET |
|---|---|---|---|---|
| April 4 - 6, 2013 | 4-H Spring Steer and Heifer Show | Exhibition Grounds Yorkton, SK | 306-783-4800 | april.yorktonex@sasktel.net |
| April 10 - 11, 2013 | Western Canadian Livestock Expo | Prairieland Park Saskatoon, SK | 1-888-931-9333 | www.saskatoonex.com |
| April 12 - 13, 2013 | Rambler Rodeo and Trade Fair | Tisdale, SK | 306-873-8893 | www.tisdalerambler.com |
| April 13, 2013 | Discover Ag in the City - Saskatoon | Saskatoon, SK | 306-933-5520 | www.celebrateagriculture.ca |

# A "cheat sheet" of conversion tables for farm-related calculations

Spring is the time of year when farmers sharpen their pencils to fine-tune their seeding, fertilizer, weed and pest control plans for the upcoming season. For those who do not rely on the various smart apps or electronic tools available, below are some of the important conversions needed for calculations used for agricultural commodities and their products. Please note that these tables are subject to change and represent overall averages.

***Units of Area***

| Unit | Square Feet | Acres |
|---|---|---|
| 1 square foot | 1 | 0.0000229568 |
| 1 acre | 43,560 | 1 |
| 1 square meter | 10.764 | 0.0002471 |
| 1 hectare | 107,639 | 2.4710 |
| **Unit** | **Square miles** | **Hectares** |
| 1 acre | 0.0015625 | 0.404686 |
| 1 square mile | 1 | 258.999 |
| 1 hectare | 0.00386102 | 1 |

FOR MORE INFORMATION

- Contact the Agricultural Knowledge Centre at 1-866-457-2377.

***Domestic and metric weights and measures commonly used for agricultural commodities***

| Unit | Equivalent | Metric weight | Equivalent |
|---|---|---|---|
| 1 ounce | 28.35 grams | 1 gram | 0.03527 ounces |
| 1 pound | 453.59 grams | 1 gram | 0.0022046 pound |
| 1 pound | 0.454 kilogram | 1 kilogram | 2.20462 pounds |
| 1 pound | 0.0005 short ton | 1 short ton | 2000 pounds |
| 1 pound | 0.0004536 metric ton | 1 metric ton | 2204.62 pounds |
| 1 pound | 0.0004464 long ton | 1 long ton | 2240 pounds |

***For 60 pound bushel weight grains (i.e. wheat, dry peas, lentils, dry beans)***

| Unit | Equivalent weight | Weight | Equivalent unit |
|---|---|---|---|
| 1 bushel | 0.03 short ton | 1 short ton | 33.33 bushels |
| 1 bushel | 0.026786 long ton | 1 long ton | 37.33 bushels |
| 1 bushel | 0.027216 metric ton | 1 metric ton | 36.74 bushels |
| 1 bushel | 27.216 kilogram | 1 kilogram | 0.03674 bushel |

***Bushel Equivalents per Tonne***

| | | | |
|---|---|---|---|
| Wheat | 36.744 | Soybean | 36.744 |
| Oats | 64.842 | Peas | 36.744 |
| Barley | 45.930 | Buckwheat | 45.930 |
| Rye | 39.368 | Mustard Seed | 44.092 |
| Flaxseed | 39.368 | Canary Seed | 44.092 |
| Canola/Rapeseed | 44.092 | Sunflower Seed | 73.487 |
| Corn | 39.368 | Triticale 1 | 42.396 |
| Faba Beans | 36.744 | Beans (White) | 36.744 |

***Metric units for farm sprayers***

| TANK CAPACITY | | | |
|---|---|---|---|
| Imperial gallons | Litres (L) | US gallons | Litres (L) |
| 100 | 454.6 | 100 | 378.54 |
| 250 | 1136.5 | 250 | 946.35 |
| 500 | 2273 | 500 | 1892.7 |
| 1000 | 4546 | 1000 | 3785.4 |

Government of Saskatchewan
Ministry of Agriculture